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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,153	04/16/2004	William M. Bishop	717664.21	3152

27128 7590 02/18/2005

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EXAMINER	
DOERRLER, WILLIAM CHARLES	

ART UNIT	PAPER NUMBER
3744	

DATE MAILED: 02/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/709,153	BISHOP ET AL.	
	Examiner	Art Unit	
	William C Doerrler	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-62* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *26-37 and 40-59* is/are allowed.

6)☒ Claim(s) *1-25,38,39 and 60-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7-7-04,7-9-04,1-5-*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5,10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Each of the independent claims above claim a "Bishop Process™ heat exchanger". Trademarks should not be used in a claim, since the trademark owner may change the structure being described by the trademark. It is further noted that a Bishop Process heat exchanger is not universally known in the art and should be described in the claim if applicant desires protection derived from the heat exchanger specifics. Currently, "Bishop Process heat exchanger" is seen as any heat exchanger, since no specific structure is given in the above claims. The dependent claims listed above depend from unclear claims, so they are unclear by association.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,6 and 10 of U.S. Patent No. 6,813,893. Although the conflicting claims are not identical, they are not patentably distinct from each other because the current claims same the inventive concept with the exception of a vaporizer for vaporizing the second fluid and specifying that the salt cavern is uncompensated. Applicant states in his specification that uncompensated salt caverns are conventional. As such using an uncompensated salt cavern in the earlier claims is seen as an obvious modification for an ordinary practitioner to make the fluid easier to retrieve from the cavern. Since the currently claimed heat exchanger places the second fluid at a "temperature that is compatible" with the cavern, it is considered obvious to one of ordinary skill in the art that the vaporizer of the patented claims could be omitted since it was claimed for achieving the same purpose.

Claims 14,21,38 and 60 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 5 and 8 of U.S. Patent No. 6,739,140. Although the conflicting claims are not identical, they are not patentably distinct from each other because The earlier claims claim the same inventive concept, moving LNG from a source (a tanker), raising the pressure to form a dense phase and pumping the fluid at a velocity to result in a Froude number greater than 10, and storing a portion of the dense phase natural gas in an uncompensated salt cavern, with the exception of claiming that a warmant is used to heat the dense phase gas prior

to storage. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention that a warmant may or may not be used to achieve a temperature that is "compatible with the uncompensated salt cavern" as claimed in both sets of claims. In regard to claim 38, the step of removing LNG from a tank is seen as inherent in the patented claims, as a tanker, as claimed in the patent, inherently is, or contains, a tank.

Claims 15-25,39,61 and 62 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 5 and 8 of U.S. Patent No. 6,739,140 in view of claims 1,6 and 10 of applicant's 6,813,893 patent. Although the conflicting claims are not identical, they are not patentably distinct from each other because The '140 patent claims the same inventive concept, moving LNG from a source (a tanker), raising the pressure to form a dense phase and pumping the fluid at a velocity to result in a Froude number greater than 10, and storing a portion of the dense phase natural gas in an uncompensated salt cavern, with the exception of obtaining natural gas from a pipeline, compressing it and cooling it before storing it in the salt cavern. The '893 claims these steps in claims 1 and 10. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the '140 claims by compressing and cooling natural gas to store in the cavern to increase the amount of natural gas stored while using a heat transfer fluid (the compressed gas) that can be used to heat the dense phase gas and then stored with it. Claim 6 of the '893 patent claims combining gases from two separate caverns in a ratio to control the heating quantity of a gas stored in a third cavern. It would have been obvious to

combine this teaching with the claims of the '140 patent to derive a gas with a controllable heat quantity that is conveniently stored.

Allowable Subject Matter

Claims 26-37 and 40-59 allowed.

The following is a statement of reasons for the indication of allowable subject matter: No teaching can be found for using a tank in relation to the inlet of a salt cavern for storing natural gas. While tanks are well known in the natural gas storage art, there is no teaching to combine a tank with a salt cavern, since the salt cavern generally replaces the tank.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reed shows a tank (accumulator 32) associated with an underground gas storage system, but the tank is not at the inlet as currently claimed, but rather at the outlet to separate liquid from gas.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C Doerrler whose telephone number is (571) 272-4807. The examiner can normally be reached on Monday-Friday 6:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on (571) 272-4808. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William C Doerrler
Primary Examiner
Art Unit 3744

WCD